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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Approved
RJS
4/27/2000
In re application of : Before the Examiner
Scott A. Morgan et al. :
Serial No.: 09/213,856 : Group Art Unit: 2700
Filed: December 17, 1998 : Intellectual Property
Title: SPEECH COMMAND INPUT : Law Department - 4054
RECOGNITION SYSTEM FOR : International Business
INTERACTIVE COMPUTER DISPLAY : Machines Corporation
WITH INTERPRETATION OF : 11400 Burnet Road
ANCILLARY RELEVANT SPEECH : Austin, Texas 78758
QUERY TERMS INTO COMMANDS :

PETITION TO CORRECT INVENTORSHIP UNDER 37 CFR 1.48(a)

This Petition is to correct the incorrect original naming of inventor by adding the following previously unnamed inventor of this application:

Anthony C. C. Temple

Attached is a Statement Under 37 CFR 1.48(a)(1) by Anthony C.C. Temple.

Attached is a Verified Statement of Facts by the original named inventors.

Attached is the written Consent of the Assignee.

Attached is a Declaration by each actual inventor.

In view of the Statement of Facts by the original named inventors, it is submitted that Anthony C. C. Temple was not named as an inventor through error without any deceptive intention on the part of actual inventors, it is respectfully requested that this Petition to add this inventor be granted.

The Commissioner is hereby authorized to charge payment of the following fee associated with this communication or credit any overpayment to Deposit Account 09-0447. A duplicate copy of this sheet is enclosed.

X Please charge my Deposit Account No. 09-0447 in the amount of \$130.00.

Respectfully submitted,

By Leslie Van Leeuwen
Leslie Van Leeuwen
Registration No. 42,196
Attorney for Applicants
IPLaw Department
IBM Corporation
11400 Burnet Road
Austin, Texas 78758
(512) 823-6746

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Before the Examiner:
Scott A. Morgan et al. :
Serial No.: 09/213,856 : Group Art Unit: 2741
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QUERY TERMS INTO COMMANDS:

STATEMENT UNDER 37 C.F.R. SECTION 1.48(a)(1)

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

I, Anthony C. C. Temple, state that I am a joint inventor of the invention entitled "Speech Command Input Recognition System For Interactive Computer Display With Interpretation Of Ancillary Relevant Speech Query Terms Into Commands".

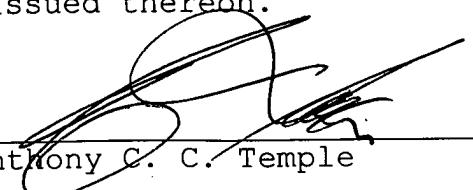
The subject invention was inadvertently filed omitting my name as a joint inventor through error and without deceptive intent on my part.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment; or both, under Section 1001 of

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Title 18 of the United States Code and that such willful
false statements may jeopardize the validity of the
application or any patent issued thereon.

31st January 2000
Date


Anthony C. C. Temple

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Before the Examiner:
Scott A. Morgan et al. :
Serial No.: 09/213,856 : Group Art Unit: 2741
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VERIFIED STATEMENT OF FACTS IN SUPPORT OF PETITION
UNDER 37 C.F.R. 1.48(A)

Approved
RJ
4/27/2000
Assistant Commissioner of Patents
Washington, D. C. 20231

Sir:

We, Scott Anthony Morgan, David John Roberts, Craig Ardner Swearingen and Alan Richard Tannenbaum, the inventors in the subject application do hereby declare that:

On November 11, 1997, we submitted to the International Business Machines Corporation (IBM) Intellectual Property Law Department (IPLaw) at Austin, Texas, Invention Disclosure number AT8-97-1230 upon which the present patent application is based. The name of Anthony Christopher Courtney Temple was included as a coinventor because he had always been regarded as a coinventor. The Invention Disclosure is attached hereto as Exhibit A.

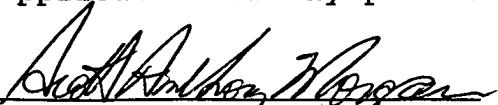
Based on information and belief, during the processing of the formal papers of the present application, the name of Anthony Christopher Courtney Temple was inadvertently omitted from the papers.

Because Anthony Christopher Courtney Temple spent a considerable portion of his time outside the United States, it was not unusual for him to review documents and execute papers at different times and places from most of the other inventors. Accordingly, his absence could be readily overlooked on the assumption that he was executing the papers elsewhere.

Based upon information and belief, the omission of the inventor was first discovered in mid-September 1999 when papers were being prepared for a counterpart patent application in Europe. The matter was brought to the attention of IBM IPLaw at Austin, Texas, which investigated and commenced the preparation of the present Petition.

The omission of Anthony Christopher Courtney Temple was the result of the above-listed clerical error which went unnoticed by the inventors for the reasons set forth above.

We hereby declare that all statements made herein are of our own knowledge and are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



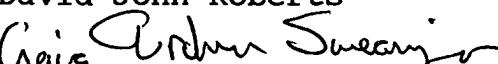
Scott Anthony Morgan

Date: 12/7/99



David John Roberts

Date: 2nd December 1999



Craig Ardner Swearingen

Date: 12/7/99



Alan Richard Tannenbaum

Date: 12/7/99

EXHIBIT A

(1)

Title of Invention (Short & Descriptive)

Method For Applying Relevance To Speech Recognition Command Systems

Disclosure No. AT897-1230		Functional Manager A. Temple		Receiving Date 11/20/97		Receiving Time 14:20:32	
Patent Attorney RICHARD A. HENKLER		Evaluator none		Evaluation Area 48			
Inventor Tannenbaum, Alan R		Emp.Serial 272884	Div./Dept. 89/tuza	Bldg. or Zip 9446	Location Austin	Tel.Number 678-4624	
Area Code 48	Electronic Address TBAUM at AUSVMR		Manager's Name Tony Temple		Manager's Electronic Address TEMPLET at IBMUSM27		
Inventor Morgan, Scott A		Emp.Serial 409383	Div./Dept. 89/AZAS	Bldg. or Zip 9446	Location Austin	Tel.Number 678-2207	
Area Code 48	Electronic Address MORGANS at IBMUSM27		Manager's Name Paul Waldo		Manager's Electronic Address PWALDO at IBMUSM20		
Inventor Swearingen, Craig A		Emp.Serial 409368	Div./Dept. 89/AZAS	Bldg. or Zip 9446	Location Austin	Tel.Number 678-8144	
Area Code 48	Electronic Address SWEARING at IBMUSM27		Manager's Name Paul Waldo		Manager's Electronic Address PWALDO at IBMUSM20		
Inventor Roberts, David J		Emp.Serial 077572	Div./Dept. 58/4900	Bldg. or Zip osu5	Location Warwick, UK	Tel.Number 7664788	
Area Code 48	Electronic Address ROBERTS at WSDLOF01		Manager's Name David Mackie		Manager's Electronic Address MACKIED at WSDLOF01		
Inventor Temple, Tony C		Emp.Serial 768748	Div./Dept. 89/haha	Bldg. or Zip 9446	Location Austin	Tel.Number 678-4725	
Area Code 48	Electronic Address TEMPLET at WSDLOF01		Manager's Name Don Haile		Manager's Electronic Address HAILE at IBMUSM21		

Table 1. Critical Dates Information

Date invention workable:	06/25/97
Used or Planned for product:	Y
If so, Product Name?	Code Name Amethyst
Release?	
Announce Date?	03/15/98
Public Demonstration or Use:	N
If so, When?	
Where?	
Disclosed to Non-IBMers:	N
If so, When?	
Where?	
CDA in place?	
Use in Manufacturing:	N
If so, When?	
Where?	
Product Name?	

EXHIBIT A

(2)

Problem

There are two main uses for speech recognition systems today: 1) conversion of speech to text, sometimes known as dictation, and 2) conversion of speech to commands to control an application or "navigate" through the graphical presentation of the application by speaking the menus, buttons, and names of other visual elements of the interface.

The problem we are addressing is related to the command and control aspects of speech recognition, and the user's ability to choose the correct word or phrase to use in order to accomplish a task.

So that the user can learn as quickly as possible how to use the speech system to control a desired application, the user is able to speak all of the words found in the graphical interface, including the menu bar commands, the buttons within dialog boxes, check box labels, radio buttons, etc. Once a user says the name of a menu item, for example, they then see a "pull-down" list of sub-menu items that they can say.

For experienced users, they may also say the names of commands in the pull-down sub-menus without actually seeing them pulled down. This makes the system efficient for people who do repetitive tasks, and especially for commonly used functions such as "print", "save", and "paste", that are normally found in pull-down submenus.

Because of this feature of enabling words that are not actually visible, there is a potentially large set of words that may be spoken at any time. Furthermore, if a user is trying to say the name of a command that is not visible, and it is a commonly used command function found in many applications, the user may say the wrong word, since different applications use different command names to invoke the same function. An example is "properties", "preferences", and "settings".

Current desktop speech control systems attempt to solve this problem by providing a reference which lists all of the commands that can currently be spoken (both visible and otherwise). This reference typically takes the form of a window on the display screen that lists all of the words broken into categories to help the user deal with the potentially large number of command words and phrases. Because the number of entries in this list is large, it has the tendency to take a significant amount of screen space, blocking some underlying application interface. Furthermore, because the window is frequently used, it tends to stay on the screen, essentially reducing significantly the amount of space that can be used for other programs. Finally, the list itself must be navigated so as to find the desired command name. This implies scrolling, expanding and contracting hierarchical lists, and choosing various category sections. The user must locate the desired word by taking their best guess as to where it may be found in the list, and then once found and spoken, hoping that the command was in fact the correct one for the task at hand.

Solution

This invention solves a number of problems found in the existing mechanisms described above.

The invention comprises an alternate assistance mechanism that is designed to provide a list of commands that are uniquely suited to the task that the user is performing. Essentially, the user describes the task, and the system suggests a relatively small set of speech commands that could perform the desired task.

Furthermore, the list is displayed in such a manner as to take up minimal space on the screen, and to be "dismissed" once the user has chosen a word from the list.

These two major aspects of the invention are described in more detail below:

1) RELEVANCE FILTERING

This aspect is the mechanism whereby a user provides a description of the desired task to be performed, and receives back a list of speech commands which have some relevance to the task. This list is taken from the total set of commands which could possibly be spoken to control an application.

The process entails the following steps at the point in time that the user asks for assistance:

EXHIBIT A (3)

When first invoked, the speech expert displays a small dialog. Two fields are apparent: 1) an entry field with a label "Say a few words to describe what you want to do", and 2) an area which will be filled later with a list of the speech commands related to the description. (illustration is available).

A microphone is displayed and the user supplies the description. If not recognized, a short message is displayed to ask the user to speak it again. For example, when used with the IBM Spimply Speaking product, the user sees "Pardon me?", but another system might display a more verbose prompt. Once recognized, the entry field displays the description, and the area below is filled with a list of application and task related voice commands taken from the active vocabulary of the application in its current state.

If the user sees the command to accomplish the task, the user speaks the word or phrase, it is briefly highlighted to acknowledge the recognition, and the application function is invoked.

If the user determines the list does not contain the correct command, the user either clears the list and starts over with a new description, or just states a new description, which automatically clears the list and displays the new description along with a new set of voice commands related to the new description. This modeless interaction is described in another disclosure.

CLAIMS

Advantages of this invention over known implementations of speech assistance systems:

1. Filtering by relevance
2. Automatic expansion of an application's vocabulary with synonyms and variants of the commands, using multi-level expansion
3. Using an expanded vocabulary to drive the speech system, rather than expanding the query terms after the query has been made
4. Using a dialog mechanism rather than a reference window
5. Allowing for modeless descriptions. The user may just speak another description if the first failed to provide the desired results.

Evaluation Questions

If this problem has been solved before, how was it solved?

Using reference windows that took up significant screen space and typically floated on top of all other windows, usually blocking some application.

Why is your solution better?

Proven, via usability studies, that relevance filtering and dialog presentation is faster and has a higher level of satisfaction.

Who outside of IBM (competitors) would want to use your solution?

Desktop speech navigation system vendors (Microsoft, Dragon Systems, Kurzweil, BBN,...)

EXHIBIT A (A)

A) Determining the dynamic, "active vocabulary". This includes collecting:

- all words from menus, buttons, and other UI controls, including the invisible, but active words from the currently active application window
- names of macros supplied by the speech system, the application, and the user
- names of other applications that the user can switch to
- generic commands that can be spoken to any application
- any other words that may be active

B) Expanding the active vocabulary with related terms. This results in the construction of an "expanded vocabulary", which will be used to control the speech recognition system in the next step. The expansion process employs, but is not limited to, the following steps:

- Each word or phrase in the active vocabulary is added to the expanded vocabulary, with an indication that it is an original active vocabulary word or phrase.
- Each WORD or PHRASE in the active vocabulary is looked up as an index into a "relevance table". If found, the corresponding contents of the table cell is used to expand the vocabulary. The cell may contain one or many additional words or phrases. Each word or phrase added to the expanded vocabulary has an indication of which active vocabulary entries caused this expansion.
- For each PHRASE in the active vocabulary, the phrase is broken into its constituent words, and each word is then used as an index into the relevance table. Once again, matching table entries are used to expand the vocabulary. This continues for all words in a phrase. Each word or phrase added to the expanded vocabulary has an indication of which active vocabulary entries caused this expansion.
- For each PHRASE in the active vocabulary, the phrase is broken into its constituent word-pairs, and each word-pair is then used as an index into the relevance table. Once again, matching table entries are used to expand the vocabulary. This continues for all word-pairs in a phrase.
- For some applications, the process continues for n-word sub-phrases.
- Lists of related words provided by users.
- Lists of related words provided by ISVs via APIs and other registry mechanisms.
- For some applications, a synonym dictionary is employed as an additional source of expanded words and phrases for words found in the active vocabulary.

C) Accepting a spoken description of the task at hand, and determining which active vocabulary entries are related. This entails waiting for the user to speak a word or phrase. Since the speech recognition system will be controlled by only the "expanded vocabulary", any recognized phrase will have been built by the process (B), above, and will therefore have an associated indication of the original active vocabulary words or phrases that resulted in the phrase being added to the expanded vocabulary. The set of original active vocabulary phrases are collected and presented to the user.

D) Accepting a spoken command from the presented list of active vocabulary words or phrases from (C). Having presented a list of command words/phrases related to the description of the task at hand, wait for the user to speak one of them and then cause the action to occur. Since the speech recognition system is still being controlled by the vocabulary built in step (B), above, the user is free to speak either one of the presented commands, or to try describing the task in different words. So, if a spoken phrase is recognized, but does not match one of the items from step (C), then step (C) is repeated for this new description. This enables a "modeless" interaction which is a significant advance, and hence described in a separate disclosure.

2) INTERACTION

This is the aspect of the invention that deals with the interaction between the user and the presentation mechanism.

This invention is intended to be employed whenever a user has either exhausted other means of assistance to determine the speech command needed to perform a task, or the user prefers to use this invention because for example, the program function is new and the user only has a conceptual idea of how to describe the task; the menu commands are not yet familiar.

The user invokes this assistance scheme by saying "Speech Expert", or "What Do I Say?" or some other trigger phrase, the exact wording of which may be customized for different users. For the purposes of this disclosure, we will call it "Speech Expert".

How could IBM discover that competitors were using your solution?

Obvious in the user interface, and system and developer toolkit descriptions.

EXHIBIT A (5)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Before the Examiner:
Scott A. Morgan et al. :
Serial No.: 09/213,856 : Group Art Unit: 2741
Filed: December 17, 1998 : Intellectual Property
Title: SPEECH COMMAND INPUT : Law Department - 4054
RECOGNITION SYSTEM FOR : International Business
INTERACTIVE COMPUTER DISPLAY : Machines Corporation
WITH INTERPRETATION OF : 11400 Burnet Road
ANCILLARY RELEVANT SPEECH : Austin, Texas 78758
QUERY TERMS INTO COMMANDS : Date: _____

CONSENT TO ADD INVENTOR

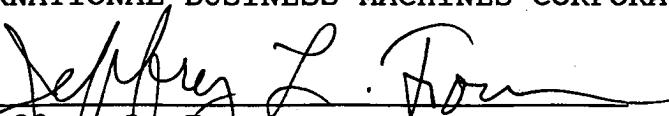
Assistant Commissioner of Patents

Washington, D. C. 20231

Sir:

International Business Machines Corporation, the original sole assignee of the entire right, title and interest in and to the above-identified application hereby consents to the addition of Anthony Christopher Courtney Temple as joint inventor in the U.S. Patent Application identified above.

INTERNATIONAL BUSINESS MACHINES CORPORATION

By: 

Jeffrey L. Forman
Manager, Information Services
Intellectual Property Law, Washington

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**DECLARATION AND POWER OF ATTORNEY FOR
PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

SPEECH COMMAND INPUT RECOGNITION SYSTEM FOR INTERACTIVE COMPUTER DISPLAY WITH
INTERPRETATION OF ANCILLARY RELEVANT SPEECH QUERY TERMS INTO COMMANDS

the specification of which (check one)

is attached hereto.

was filed on December 17, 1998
 as Application Serial No. 09/213,856
 and was amended on _____
 (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):	Priority Claimed		
<u>(Number)</u>	<u>(Country)</u>	<u>(Day/Month/Year)</u>	<u>Yes</u> <u>No</u>

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior

DOCKET NUMBER: AT9-98-343

application and the national or PCT international filing date of this application:

(Application Serial #) _____ (Filing Date) _____ (Status)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

John W. Henderson, Jr., Reg. No. 26,907; Thomas E. Tyson, Reg. No. 28,543; Robert M. Carwell, Reg. No. 28,499; Jeffrey S. LaBaw, Reg. No. 31,633; Douglas H. Lefeve, Reg. No. 26,193; Casimer K. Salys, Reg. No. 28,900; David A. Mims, Reg. No. 32,708; Richard A. Henkler, Reg. No. 39,220; Volel Emile, Reg. No. 39,969; James H. Barksdale, Jr. Reg. No. 24,091; Anthony V. England, Reg. No. 35,129; Christopher A. Hughes, Reg. No. 26,914; Edward A. Pennington, Reg. No. 32,588; John E. Höel, Reg. No. 26,279; Joseph C. Redmond, Jr., Reg. No. 18,753; Leslie A. Van Leeuwen, Reg. No. 42,196; Marilyn S. Dawkins, Reg. No. 31,140; and J. B. Kraft, Reg. No. 19,226.

Send correspondence to: Leslie Van Leeuwen, International Business Machines Corporation, Intellectual Property Law Department, Internal Zip 4054, 11400 Burnet Road, Austin, Texas 78758 and direct all telephone calls to Leslie Van Leeuwen, (512) 823-6746.

FULL NAME OF SOLE OR FIRST INVENTOR: Scott Anthony Morgan

INVENTORS SIGNATURE: Scott Anthony Morgan DATE: 12/7/99

RESIDENCE: 3609 Kentfield Road
Austin, Texas 78759

CITIZENSHIP: United States

POST OFFICE ADDRESS: 3609 Kentfield Road
Austin, Texas 78759

DOCKET NUMBER: AT9-98-343

FULL NAME OF SECOND INVENTOR: David John Roberts

INVENTORS SIGNATURE: David John Roberts

DATE: 2nd December 1999

RESIDENCE: Sycamore Lodge, Church Street
Stockton, Warwickshire CV23 8JG
United Kingdom

CITIZENSHIP: United Kingdom

POST OFFICE ADDRESS: Sycamore Lodge, Church Street
Stockton, Warwickshire CV23 8JG
United Kingdom

FULL NAME OF THIRD INVENTOR: Craig Ardner Swearingen

INVENTORS SIGNATURE: Craig Ardner Swearingen

DATE: 12/7/99

RESIDENCE: 8905 Martha's Drive
Austin, Texas 78717

CITIZENSHIP: United States

POST OFFICE ADDRESS: 8905 Martha's Drive
Austin, Texas 78717

FULL NAME OF FOURTH INVENTOR: Alan Richard Tannenbaum

INVENTORS SIGNATURE: Alan Richard Tannenbaum

DATE: 12/7/99

RESIDENCE: 3801 Greystone Drive
Austin, Texas 78731

CITIZENSHIP: United States

POST OFFICE ADDRESS: 3801 Greystone Drive
Austin, Texas 78731

FULL NAME OF SOLE OR FIFTH INVENTOR: Anthony Christopher Courtney Temple

INVENTORS SIGNATURE: [Signature]

DATE: 2nd December 1999

RESIDENCE: "Ferndene", Little Back Lane
Hellidon, Northants, United Kingdom NN11 6GE

CITIZENSHIP: United Kingdom

POST OFFICE ADDRESS: "Ferndene", Little Back Lane
Hellidon, Northants, United Kingdom NN11 6GE

CERTIFICATE UNDER 37 C.F.R. SECTION 73(b)

Applicants: Scott A. Morgan et al.

Application No.: 09/213,856

Filed: December 17, 1998

For: SPEECH COMMAND INPUT RECOGNITION SYSTEM FOR
INTERACTIVE COMPUTER DISPLAY WITH INTERPRETATION OF
ANCILLARY RELEVANT SPEECH QUERY TERMS INTO COMMANDS

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International Business Machines Corporation, a Corporation, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of either:

A. X An assignment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent and Trademark Office at Reel 9668, Frame 0432, or which a copy thereof is attached.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

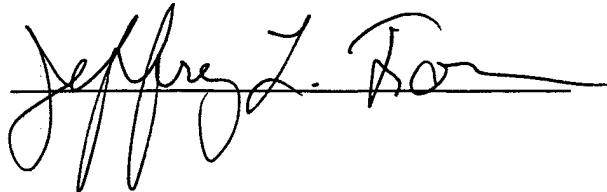
I hereby declare that all statements made herein are of my own knowledge and are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 11 February 2000

Name: Jeffrey L. Forman

Title: Manager, Information Services
Intellectual Property Law
Washington

Signature: Jeffrey L. Forman



LETTER OF AUTHORITY

I, Marshall C. Phelps, Vice President, Intellectual Property and Licensing of International Business Machines Corporation (IBM), a New York corporation, do hereby delegate the authority to approve and execute documents on behalf of IBM relating to proceedings in the Patent, Trademark Registration or Copyright Offices servicing any country or region of the world, or to related appeal proceedings, including, but not limited to: petitions; powers of Attorney; authorizations; verification; nominations of representatives; declarations; documents relating to maintenance and defense of the resulting industrial property rights; assignments of rights to apply for and acquire patents and trademark registrations, and evidence of such assignments; request for the registration of patents as available for licensing; reports of inventions and petitions for waiver of patent rights to any department or agency of the United States Government; and, assignments, licenses and other instruments confirmatory of Government rights in patents and inventions, to Jeffrey L. Forman, Manager, Information Services, Intellectual Property Law, Washington.

Date:

3/25/96

Marshall C. Phelps
Marshall C. Phelps, Jr.
Vice President - Intellectual Property & Licensing
International Business Machines Corporation



UNITED STATES DEPARTMENT OF COMMERCE

Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APRIL 06, 1999

PTAS

IBM CORPORATION
RICHARD A. HENKLER
INTELLECTUAL PROPERTY LAW
11400 BURNET ROAD
AUSTIN, TX 78758



100934292A

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 12/16/1998

REEL/FRAME: 9668/0432
NUMBER OF PAGES: 5

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

MORGAN, SCOTT A.

DOC DATE: 12/15/1998

ASSIGNOR:

ROBERTS, DAVID J.

DOC DATE: 12/15/1998

ASSIGNOR:

SWARINGEN, CRAIG A.

DOC DATE: 12/16/1998

ASSIGNOR:

TANNENBAUM, ALAN R.

DOC DATE: 12/16/1998

ASSIGNEE:

INTERNATIONAL BUSINESS MACHINES
CORPORATION
NEW ORCHARD ROAD
ARMONK, NEW YORK 10504

REASON OF RECORDING
FILING DATE: 12/17/1998
ISSUE DATE:

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• 9668/0432 PAGE 2

SHIRLIE SIMON, EXAMINER
ASSIGNMENT DIVISION
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01-04-1999

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cket No. AT9-98-343

RECO

MAD 12.16.98To the Assistant Commissioner
original documents or copy

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PATENTS

Record the attached

U.S. PTO
12/16/98
JC135 000212056

1. Name of conveying party(ies):

Scott A. Morgan
David J. Roberts
Craig A. Swearingen
Alan R. Tannenbaum

2. Name and address of receiving party(ies):

International Business
Machines Corporation
New Orchard Road
Armonk, New York 10504

3. Nature of conveyance:

Assignment

Execution Date: 12-15-98 12-16-98

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is 12-15-98 12-16-98

A. Patent Application No.(s)

09-213856

B. Patent No.(s)

5. Name and address of party to whom correspondence concerning document should be mailed:

Richard A. Henkler
IBM Corporation
Intellectual Property Law
Internal Zip 4054
11400 Burnet Road
Austin, TX 78758
(512) 823-0962

6. Total number of applications and patents involved: 17. Total fee (37 CFR 3.41) \$ 40.00

Authorized to be charged to deposit account

8. Deposit Account Number: 09-0447

12/29/1998 DURMS 00000236 090447 09213056

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Robert M. Calwell
Name of Person Signing

Robert M. Calwell
Signature

12/17/98
Date

Total number of pages including cover sheet: 5

ASSIGNMENT

Whereas, we,

(1) Scott A. Morgan
County of Travis

of Austin,
and State of Texas,

and

(2) David J. Roberts
Warwickshire

of Stockton,
in the United Kingdom.

and

(3) Craig A. Swearingen
County of Williamson

of Austin,
and State of Texas.

and

(4) Alan R. Tannenbaum
County of Travis

of Austin,
and State of Texas.

have invented certain improvements in

SPEECH COMMAND INPUT RECOGNITION SYSTEM FOR INTERACTIVE COMPUTER DISPLAY WITH INTERPRETATION OF ANCILLARY RELEVANT SPEECH QUERY TERMS INTO COMMANDS

and executed, respectively, a United States patent application therefor on
(Dates Inventors Signed Declaration) (1) 12/16, 1998, and
(2) , 1998, and (3) 12/16, 1998, and (4)
12/16, 1998.

Whereas, INTERNATIONAL BUSINESS MACHINES CORPORATION, a corporation of New York, having a place of business at Armonk, New York 10504, (hereinafter called IBM), desires to acquire the entire right, title and interest in the said application and invention, and to any United States and foreign patents to be obtained therefor:

Now therefore, for a valuable consideration, receipt whereof is hereby acknowledged, we, the above named, hereby sell, assign, and transfer to IBM, its successors and assigns, the entire right, title and interest in the said application and invention therein disclosed for the United States and foreign countries, and all rights of priority resulting from the filing of said United States application, and we request the Commissioner of Patents to issue any Letters Patent granted upon the invention set forth in said application to IBM, its successors and assigns; and we hereby agree that IBM may apply for foreign Letters Patent on said invention and we will execute all papers necessary in connection with the United States and foreign applications when called upon to do so by IBM.

(1) Signed at AUSTIN on 12/16, 1998.

Scott A. Morgan
Scott A. Morgan

and (2) Signed at _____ on _____, 1998.

David J. Roberts

and (3) Signed at Austin on 12/16, 1998.

Craig A. Swearingen
Craig A. Swearingen

and (4) Signed at Austin on 12/16, 1998.

Alan R. Tannenbaum
Alan R. Tannenbaum

IBM DOCKET NO. AT9-98-343

A S S I G N M E N T

Whereas, we,

(1) Scott A. Morgan
County of Travis

of Austin,
and State of Texas,

and

(2) David J. Roberts
Warwickshire

of Stockton,
in the United Kingdom.

and

(3) Craig A. Swearingen
County of Williamson

of Austin,
and State of Texas,

and

(4) Alan R. Tannenbaum
County of Travis

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and State of Texas,

have invented certain improvements in

SPEECH COMMAND INPUT RECOGNITION SYSTEM FOR INTERACTIVE COMPUTER DISPLAY WITH
INTERPRETATION OF ANCILLARY RELEVANT SPEECH QUERY TERMS INTO COMMANDS

and executed, respectively, a United States patent application therefor on
(Dates Inventors Signed Declaration) (1) _____, 1998, and

(2) December 15, 1998, and (3) _____, 1998, and (4)
_____, 1998.

Whereas, INTERNATIONAL BUSINESS MACHINES CORPORATION, a corporation of New York, having a place of business at Armonk, New York 10504, (hereinafter called IBM), desires to acquire the entire right, title and interest in the said application and invention, and to any United States and foreign patents to be obtained therefor.

Now therefore, for a valuable consideration, receipt whereof is hereby acknowledged, we, the above named, hereby sell, assign, and transfer to IBM, its successors and assigns, the entire right, title and interest in the said application and invention therein disclosed for the United States and foreign countries, and all rights of priority resulting from the filing of said United States application, and we request the Commissioner of Patents to issue any Letters Patent granted upon the invention set forth in said application to IBM, its successors and assigns; and we hereby agree that IBM may apply for foreign Letters Patent on said invention and we will execute all papers necessary in connection with the United States and foreign applications when called upon to do so by IBM.

(1) Signed at _____ on _____, 1998.

Scott A. Morgan

IBM DOCKET NO. AT9-98-343

and (2) Signed at Warwick on December 15, 1998.


David J. Roberts

David J. Roberts

and (3) Signed at _____ on _____, 1998.


Craig A. Swearingen

and (4) Signed at _____ on _____, 1998.


Alan R. Tannenbaum

DOCKET NUMBER: AT9-98-343

DECLARATION AND POWER OF ATTORNEY FOR
PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

SPEECH COMMAND INPUT RECOGNITION SYSTEM FOR INTERACTIVE COMPUTER DISPLAY WITH
INTERPRETATION OF ANCILLARY RELEVANT SPEECH QUERY TERMS INTO COMMANDS

the specification of which (check one)

is attached hereto.

was filed on _____
as Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

Priority Claimed

(Number)	(Country)	(Day/Month/Year)	— Yes <input type="checkbox"/> No <input type="checkbox"/>
----------	-----------	------------------	--

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior

DOCKET NUMBER: AT9-98-343

application and the national or PCT international filing date of this application:

(Application Serial #)	(Filing Date)	(Status)
------------------------	---------------	----------

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

John W. Henderson, Jr., Reg. No. 26,907; Thomas E. Tyson, Reg. No. 28,543; Robert M. Carwell, Reg. No. 28,499; Jeffrey S. LaBaw, Reg. No. 31,633; Douglas H. Lefeve, Reg. No. 26,193; Casimer K. Salys, Reg. No. 28,900; David A. Mims, Reg. No. 32,708; Richard A. Henkler, Reg. No. 39,220; Volel Emile, Reg. No. 39,969; James H. Barksdale, Jr. Reg. No. 24,091; Anthony V. England, Reg. No. 35,129; Christopher A. Hughes, Reg. No. 26,914; Edward A. Pennington, Reg. No. 32,588; John E. Hoel, Reg. No. 26,279; Joseph C. Redmond, Jr., Reg. No. 18,753; Leslie A. Van Leeuwen, Reg. No. 42,196; Marilyn S. Dawkins, Reg. No. 31,140; and J. B. Kraft, Reg. No. 19,226.

Send correspondence to: Richard A. Henkler, International Business Machines Corporation, Intellectual Property Law Department, Internal Zip 4054, 11400 Burnet Road, Austin, Texas 78758 and direct all telephone calls to Richard A. Henkler, (512) 823-0962.

FULL NAME OF SOLE OR FIRST INVENTOR: Scott Anthony Morgan

INVENTORS SIGNATURE: _____ DATE: _____

RESIDENCE: 3609 Kentfield Road
Austin, Texas 78759

CITIZENSHIP: United States

POST OFFICE ADDRESS: 3609 Kentfield Road
Austin, Texas 78759

DOCKET DATE 12-15-98

DOCKET NUMBER: AT9-98-343

FULL NAME OF SECOND INVENTOR: David John Roberts

INVENTORS SIGNATURE: David John Roberts DATE: December 15, 1998

RESIDENCE: Sycamore Lodge, Church Street
Stockton, Warwickshire CV23 8JG
United Kingdom

in 826 ed follow page

CITIZENSHIP: United Kingdom

* only one name is
plurual names are
which a patent is

POST OFFICE ADDRESS: Sycamore Lodge, Church Street
Stockton, Warwickshire CV23 8JG
United Kingdom

BY WITH

FULL NAME OF THIRD INVENTOR: Craig Ardner Swearingen

INVENTORS SIGNATURE: _____ DATE: _____

RESIDENCE: 8905 Martha's Drive
Austin, Texas 78717

CITIZENSHIP: United States

POST OFFICE ADDRESS: 8905 Martha's Drive
Austin, Texas 78717

FULL NAME OF FOURTH INVENTOR: Alan Richard Tannenbaum

INVENTORS SIGNATURE: _____ DATE: _____

RESIDENCE: 3801 Greystone Drive
Austin, Texas 78731

CITIZENSHIP: United States

POST OFFICE ADDRESS: 3801 Greystone Drive
Austin, Texas 78731